

In the Claims:

The following Listing of Claims replaces all prior versions and listings of claims in the application.

Listing of the Claims:

- 1-2. (Canceled)
3. (Currently Amended) [[The]]A method of claim 1 for preparing a peptide antigen with modulated immunogenicity comprising substituting at least a first amino acid located in a CTL epitope with, wherein the first substitute amino acid is a first substitute amino acid that is a non-natural amino acid selected from the group consisting of γ -aminobutyric acid, norvaline, norleucine, isophenylalanine, phenyl glycine, homolysine, γ -methyl l-leucine, homophenylalanine, 2-amino 2-hydroxy acetic acid, homoserine, homoleucine, and ornithine.
4. (Currently Amended) The method of claim [[1]]3, wherein the side chain of the first substitute amino acid is an aliphatic side chain.
5. (Currently Amended) The method of claim [[1]]3, wherein the first substitute amino acid extends the side chain as compared to the first amino acid.
6. (Withdrawn) The method of claim 5, wherein the first substitute amino acid adds a $-\text{CH}_2/\text{CH}_3$ group to the side chain as compared to the first amino acid.
7. (Withdrawn) The method of claim 5, wherein the first substitute amino acid adds two $-\text{CH}_2/\text{CH}_3$ groups to the side chain as compared to the first amino acid.
8. (Currently Amended) The method of claim [[1]]3, wherein the first substitute amino acid shortens the side chain as compared to the first amino acid.
9. (Canceled)

10. (Withdrawn) The method of claim 8, wherein the first substitute amino acid reduces two $-CH_2/CH_3$ groups on the side chain as compared to the first amino acid.
11. (Canceled)
12. (Withdrawn) The method of claim 4, wherein the first substitute amino acid eliminates an $-NH_2$ group from the side chain as compared to the first amino acid.
13. (Withdrawn) The method of claim 4, wherein the first substitute amino acid adds an $-NH_2$ group to the side chain as compared to the first amino acid.
14. (Currently Amended) The method of claim ~~[[1]]~~3, further comprising ~~determining~~ identifying the CTL epitope of the antigen prior to substituting the at least a first amino acid.
15. (Currently Amended) The method of claim ~~[[1]]~~3, further comprising modeling the CTL epitope while bound in the MHC-I groove.
16. (Withdrawn) The method of claim 1, further comprising modeling the CTL epitope while bound in the MHC-II groove.
17. (Withdrawn) The method of claim 1, further comprising substituting a second amino acid located in the CTL epitope with a second substitute amino acid having an extended or shortened side chain as compared to the second amino acid.
18. (Withdrawn) The method of claim 17, further comprising substituting a third amino acid located in the CTL epitope with a third substitute amino acid having an extended or shortened side chain as compared to the third amino acid.
19. (Withdrawn) The method of claim 18, further comprising substituting a fourth amino acid located in the CTL epitope with a fourth substitute amino acid having an extended or shortened side chain as compared to the fourth amino acid.
20. (Currently Amended) The method of claim ~~[[1]]~~3, wherein the antigen is a tumor antigen.

21. (Original) The method of claim 20, wherein the tumor antigen is derived from breast cancer, ovarian cancer, prostate cancer, blood cancer, skin cancer, uterine cancer, cervical cancer, liver cancer, colon cancer, lung cancer brain cancer, head & neck cancer, stomach cancer, esophageal cancer, pancreatic cancer, or testicular cancer.
22. (Original) The method of claim 21, wherein the tumor antigen is HER-2.
23. (Currently Amended) The method of claim [[1]]3, wherein the antigen is a viral antigen.
24. (Withdrawn) The method of claim [[1]]3, wherein the antigen is a bacterial antigen.
25. (Withdrawn) The method of claim [[1]]3, wherein the antigen is a parasitic antigen.
26. (Currently Amended) The method of claim [[1]]3, wherein modulation of immunogenicity comprises an increase in the antigen's ability to selectively activate high-avidity CTL precursors.
27. (Withdrawn) The method of claim 1, wherein modulation of immunogenicity comprises an increase in the antigen's ability to activate low-avidity CTLs.
28. (Currently Amended) The method of claim [[1]]3, wherein modulation of immunogenicity comprises an increase in the antigen's ability to protect CTLs from activation induced cell death.
29. (Currently Amended) The method of claim [[1]]3, wherein modulation of immunogenicity comprises an increase in the antigen's ability to selectively activate cytokine production.
30. (Withdrawn) The method of claim [[1]]3, wherein modulation of immunogenicity comprises an increase in the antigen's ability to induce CTL proliferation.
31. (Currently Amended) The method of claim [[1]]3, wherein the substitution increases the affinity of the antigen for a T cell receptor.
32. (Withdrawn) The method of claim [[1]]3, wherein the substitution reduces interactions that ~~interference~~interfere with T cell receptor binding.

33-43. (Canceled)

44. (New) The method of claim 3, wherein the non-natural amino acid is γ -aminobutyric acid.

45. (New) The method of claim 3, wherein the non-natural amino acid is norvaline.

46. (New) The method of claim 3, wherein the non-natural amino acid is norleucine.

47. (New) The method of claim 3, wherein the non-natural amino acid is isophenylalanine.

48. (New) The method of claim 3, wherein the non-natural amino acid is phenyl glycine.

49. (New) The method of claim 3, wherein the non-natural amino acid is homolysine.

50. (New) The method of claim 3, wherein the non-natural amino acid is γ -methyl-l-leucine.

51. (New) The method of claim 3, wherein the non-natural amino acid is homophenylalanine.

52. (New) The method of claim 3, wherein the non-natural amino acid is 2-amino-2-hydroxy acetic acid.

53. (New) The method of claim 3, wherein the non-natural amino acid is homoserine.

54. (New) The method of claim 3, wherein the non-natural amino acid is homoleucine.

55. (New) The method of claim 3, wherein the non-natural amino acid is ornithine.